



REPLY TO
ATTN. OF: HW-093

MEMORANDUM

SUBJECT: ACTION MEMORANDUM, Cliff's Battery Service, Sunnyside, Washington

FROM: James M. Everts, Chief

A handwritten signature in cursive script, reading "James M. Everts".

TO: Charles E. Findley, Director
Hazardous Waste Division

THROUGH: Philip G. Millam, Chief
Superfund Branch

CLIFF'S BATTERY SERVICE

1.0 PURPOSE

The purpose of this removal is to mitigate the public health and environmental effects of lead-contaminated soils at the Cliff's Battery Service (CBS) site located in Sunnyside, Washington. The site is located in a commercial/residential area and poses an ingestion/inhalation hazard to the public and a threat to the area's drinking water supply.

2.0 BACKGROUND

CBS is located in a mixed commercial/residential area and operated from 1958 to 1981, dismantling used lead batteries and recycling the lead. After the battery casings were opened, and the lead plates removed, the empty casings were piled on the edge of a marshy depression on site. Periodically a bulldozer was used to push the casings and waste sulfuric acid into the marshy depression. During the period from 1977 to 1978, the facility installed a lead smelting furnace to produce lead wheel weights from the recycled lead. The entire operation was closed down in 1981, when the owner, Cliff Rogers, died.

The two acre site is bordered on the west by a church and private residences; on the north and south sides by agricultural fields; and on the east side by the residences of the current property owners. The former marshy depression which was filled in with battery casings, is now partially covered with non-contaminated soil along the southern end. The soil cover tapers to the north until uncovered battery casings are evident. The northeast corner of the site consists of a gravel lot strewn with assorted salvaged materials such as, drums of lead wheel weights, glass and weed.

The drinking water within a 1/4 mile radius of the site is supplied by shallow wells (40-60 feet deep). At least 20 residences are dependent on

these sources. The closest domestic well to the site is within 25 feet of the southwest corner, at a depth of 50 feet. A drainline passes through the battery casings and has two catch basins for sediment traps, located downgradient. This drainline passes underground for approximately 1/2 mile before draining into an irrigation ditch, off-site.

In 1978, the Yakima County Health District performed blood tests and found that 14 of the 15 employees of CBS, had blood lead levels greater than 40 ug/dl. A blood lead level of 40 ug/dl is considered to be elevated for individuals with occupational exposure.

In 1984, the Washington Department of Ecology, sampled the surface and groundwater for lead contamination in the drainline and local residents wells. The highest lead concentration (595 ug/l) was found in the surface water of the drainline, but lead was not detected in the water from any of the residential well samples.

In 1986, the Ecology and Environment (E & E) Field Investigation Team, sampled the groundwater, soil and sediments, and found elevated lead concentrations. The highest lead levels in soil (2840 mg/kg) found in a pasture off-site were 200 times greater than background.

This is a non NPL site.

At this time there are no plans by the Washington State Department of Ecology (Ecology) to initiate any removal actions at CBS. Coordination of the details of this project with Ecology and the EPA Washington Operations Office will take place prior to and during this removal. All applicable ARAR's and Land Disposal Restrictions will be followed.

If approved, this project will take place and be completed prior to upcoming restrictions on the disposal of "EP Characteristic" waste, which become effective May 1, 1990. Prior to off-site disposal of waste from this site, a verification will be made of the wastes sites currently eligible to receive CERCLA waste.

3.0 THREAT

CBS represents an ingestion/inhalation threat to the public from lead-contaminated soils detected on site. Analytical results from samples collected in February, 1989, by the E & E Technical Assistance Team, indicate total lead concentrations in the interface of the battery casings and native soil, are as high as 2800 mg/kg. The pH values from samples collected in the native soil below the battery casings, are as low as 5.3. The extract of a sample from the battery casings layer failed the EP toxicity characteristics for lead of 5 mg/l, with a value of 166 mg/l. The site is unfenced, allowing unrestricted public access, with exposed battery casings at ground level. In addition, the current property owners use herbicides to destroy the vegetative growth over the battery casings so a motorcycle track can be used. The lack of vegetation and motorcycle usage, tends to generate dust from the surface soils over the battery casings, thereby enhancing the inhalation hazard.

The drainline was sampled and found to contain total lead concentrations in the sediments, as high as 1970 mg/kg. The pH values from the sediment collected in the drainline, were as low as 4.44. There is also a threat of lead migrating off site via the shallow water table, to contaminate drinking water wells. The total lead levels in the local groundwater wells, were as high as 0.002 mg/l. The Maximum Contamination Level for lead in drinking water is 0.05 mg/l. However, the highest EP toxicity value (166 mg/l) found in the battery casings indicate the form of lead is expected to be mobile.

4.0 PROPOSED PROJECT AND COSTS

The Superfund Response and Investigations Section proposes to conduct a removal action at CBS to mitigate the public threats. The following actions were considered:

1. No action: will not mitigate public threats.
2. Disposal of contaminated soil outside Washington: based on currently available data, approximately 3100 tons of lead-contaminated soil will need to be removed. This option is estimated to cost \$898,062 for cleanup and disposal costs. This option includes digging up the contaminated soil from the ground, stockpiling the soil, and off-site disposal of the contaminated soil using trucks to ship waste to an EPA approved hazardous waste facility.
3. Soil Washing: on-site solution for the removal of lead using extraction chamber to mix excavated soil with chelating agents. Actions would include the excavation of lead-contaminated soil, stockpiling on-site and treatment. The majority of the soil could then be back filled into the excavation and only the concentrated lead precipitate would require landfill disposal. The cost is estimated at \$465,000 - \$775,000. This option would involve problems that make it infeasible. This innovative technology is not field tested, and headquarters guidance requires that only proven technologies be used.
4. Site stabilization: on-site solution for the control of contaminated soils, using pozzolanic materials as the fixation agent. The cost is estimated to range from \$387,000 - \$465,000. This option would involve problems which make it infeasible. The site is not large enough to accommodate soil fixation. The long-term stability of the monolith to leaching is unknown which would require groundwater monitoring. The treatability studies are time consuming, and materials in the soil may cause interferences.

Alternative Number 2 of the above was selected as the preferred cleanup method. This was the most cost effective and appropriate cleanup strategy for this site.

It is estimated that on-site activities will take approximately 3 weeks to accomplish the site removal actions.

The projected project ceiling is as follows:

Extramural Costs:

ERCS	\$ 735,983
TAT	44,940
15% Project Contingency	117,139
Total Extramural Costs:	\$ 898,062

Intramural Costs:

EPA Direct:	\$ 23,310
EPA Indirect:	12,600
Total Intramural Costs:	\$ 35,910
Total Project Costs:	\$ 933,972

Prior to the initiation of removal actions, EPA must determine that the criteria in Section 300.65 of the National Contingency Plan have been met. This includes identifying responsible parties, and an effort made to have them perform the necessary removal actions. Also, the site's contamination must represent a hazard to public health and/or the environment.

The owner of CBS has been advised of the need for corrective actions both verbally and in the form of a written notice letter. EPA has been informed by the owner that he will assist EPA by supplying information, but was not financially capable of funding a cleanup.

Sample analyses have shown the lead contamination to be widespread both on the soil surface and to depths of five feet. The lead contamination in the battery casings layer was as high as 2800 mg/kg for total lead, and with EP toxicity being as high as 166 mg/l. Levels of 500-1000 mg/kg total lead and EP toxicity greater than 5 mg/l are considered to be significant, and would pose environmental health threats. The lead contamination in the sediments of the drainline were as high as 1970 mg/kg, and had a pH as low as 4.44, showing that the shallow water table is mobilizing the lead off-site. The widespread nature of the lead contamination along with the high concentrations pose a threat to the nearby community. This threat is from surface contamination which represents both contact and inhalation hazards. This site also represents a direct threat to the area groundwater as evidenced by the migration of lead off site through the drainline. The high EP toxicity shows the lead to be in a highly mobile form that is very soluble, and in time will contaminate the groundwater.

As the conditions at the Cliff's Battery Service site meet the NCP Section 300.65 (b)(2) criteria for removal, I recommend your concurrence on the request.

Concurrence

Non-Concurrence

for Randall F. Smith 3/21/90
Charles E. Findley, Director Date
Hazardous Waste Division

Charles E. Findley, Director Date
Hazardous Waste Division

Attachments